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Information centres in Ghana overcome challenges to serve rural communities

A new approach to telecentres in South Africa focuses on collaboration and partnerships

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Editorial

Past challenges provide new solutions

There are many models for bringing ICTs to rural areas of ACP countries. Donor agencies and governments have invested in telecentres, small-scale entrepreneurs have established village internet cafes, and NGOs and telecom companies have set up local cell phone services. Some initiatives are more prosperous than others, but many have received a great deal of criticism in the past. The intentions are usually the same; to provide remote communities with the communication and information facilities they need for increased income generation, and to offer access to financial, educational, health and other services that are more readily available in urban areas. To deliver this kind of access in the future, telecentres have to evolve quickly to ensure they can still serve rural communities.

The plan for the Ghanaian government's Community Information Centre (CIC) initiative was to develop telecentres in 100 rural districts that would provide resources and access to technology to communities by charging businesses, organisations and individuals for the use of the facilities. The for-profit services would cover the costs of the community resource centre, but it was this combination that caused many of the centres to fail. While paying customers surfed the web and sent e-mails, the computers and other equipment were unavailable to people from the community.

As more CICs closed or failed to make a profit, external advisers were called in to investigate the challenges facing the centres, and suggest possible solutions. They discovered many reasons for the centres' poor performance, but one major finding was that few of the CICs provided content that would be interesting and relevant to the issues facing people in the community. To increase interest from people living in the surrounding area, the centre staff – in co-operation with other related agencies and organisations – would have to develop content locally, and make that widely available to residents.

Connections

The Ugunja Community Resource Centre (UCRC) in Kenya has been in existence since 1988, and the staff there quickly learned the importance of providing services relevant to the community, most of whom are farmers. For example, UCRC provides a link between national agricultural research institutes and local producers.

The organisation has a 'farmer-led documentation' programme, where they train farmers to use cameras and audio recorders, and in report-writing skills to gather data on agricultural practices and the progress of newly applied techniques. They share the documentation with the researchers and with other farmers using printed reports, presentations or even songs and talks at community meetings.

UCRC also provides a range of basic and advanced courses in technology skills and computer literacy, and have been very successful in enrolling women in the courses. Siyafunda Community Technology Centres have made training a priority too in the communities where they operate in South Africa. The organisation works with major international technology companies to offer affordable ICT skills courses to young people in areas of high unemployment.

Siyafunda has developed a broad network of partners that support various aspects of their centres' facilities. Local government municipalities make vacant premises available and extend their own broadband internet for connectivity. Community organisations provide support in developing services and information relevant to users and promote the centres through their own network. All this is done in co-operation with national government ministries to make sure that there is no duplication of effort or unnecessary extra investment in the same community.

A lot has been learned over the last few decades about how to set up and maintain telecentre networks, and there is clearly no single model that works in every situation. Many organisations and entrepreneurs, however, are now applying those lessons and adapting them to provide ICT services, skills development and support that is largely absent in many rural communities. ◀

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The essential essence of telecentres

A future for telecentres

The beginning of telecentres can be traced to the mid-1980s, when individuals, and a handful of non-profit organisations, established telecentres in several countries in Europe and the Americas. Since then, many ICT practitioners have preached its extinction, pointing to the proliferation of more affordable and accessible personal computers and, more recently, to the explosive growth of smartphones around the globe as evidence of the closing gap between those with access to ICT and those without.

But, almost three decades later, telecentres are still here, present in almost every country on Earth, providing critical services to more than 1.5 billion people every day, and it is estimated that by the end of this decade, they could reach over 2 billion people.

Initially, telecentres came about as a way to bridge the digital divide and provide access to information and technology to those who could not afford it or were geographically disconnected from accessing technological tools. Today, however, the role of telecentres has grown beyond that. They now provide a variety of services to an even greater and diverse clientele.

Many governments invested heavily in telecentres during the 1990s and early 2000s. Similarly, multilateral and international aid organisations decided to support the expansion and deployment of computers to rural areas. Most of these initiatives, however, lacked proper long-term sustainability plans or proper guidelines for service development.

As a result, many of these first projects were cancelled and the technological infrastructure was often lost. Still, many of these models evolved. In some cases, the local organisations in charge of these centres developed alliances with non-profits, academia and other specialised organisations, which led to the emergence of a new model: Telecentre 2.0.

FRANCK OUZOU / IHH

Telecentres can serve a wide range of functions in the community, providing training, information services, and support for farmers and entrepreneurs.

Diversity

There are many examples of telecentres becoming hubs for community development and community empowerment centres where the community, as a whole, find and learn new skills, and where the private sector has an opportunity to participate in the future delivery of products and services to a very diverse population.

Telecentres today tend to be highly specialised, and yet continue to provide basic ICT literacy training. Even though people have increasingly sophisticated and advanced needs and interests regarding ICT, there is always a need for basic training among sectors of the population.

We now see a wide range of telecentres: from very humble training centres in rural India, to state-of-the-art innovation centres in urban Barcelona; telecentres that support farmers in rural Africa and Asia to telecentres specialising in women's issues and children's education; telecentres that have embraced the opportunities of entrepreneurialism in Brazil, to telecentres that provide a chance for retirees to enter the digital age in Europe. Telecentres have evolved into a global community of ICT hubs, with a strong social mission and strong motivation to continuously search for innovation and new opportunities.

My own organisation, telecentre.org, started in November 2005 and until 2009, provided grants, technical assistance to organisations hosting telecentre projects, and facilitated the creation of telecentre networks in over 40 countries. In March 2010, the telecentre.org programme became a formal and independent foundation, Telecentre.org Foundation (TCF), establishing its first office in Manila, Philippines.

Long-term sustainability remains a challenge for many networks around the globe, and one of TCF's main priorities is to transform telecentre networks into channels for the distribution of products and services. This allows the Foundation to engage in much broader alliances with the private sector and donors, developing stable business models for telecentres.

As a result, more telecentres are developing new expertise, becoming critical providers for a variety of communication and educational services, such as job placement, e-government services, agriculture and health-related training and services, the facilitation of access to new sources of funding and social investment.

Another fundamental factor in the resilience of telecentres is the human factor. Telecentre operators have become community leaders and facilitators in many different areas of development and community growth. The telecentre operator is often a trusted figure that facilitates access to information and opportunities that transform communities, one person at a time.

Despite all the latest technologies and the undeniable massive penetration of cell phones, there always seems to be a need for a 'big screen' and a familiar face that helps us navigate, learn and embrace the new in this digital age. For this reason, telecentres will continue to play a critical role in the transformation of our society. ◀

Support at the centre

In the years since they were first established, Ghana's community information centres have faced a wide range of challenges as they bring ICTs to rural communities. With the help of specialist advisers, many of those problems have been overcome.

A future for telecentres

The Northern and Upper East Regions of Ghana are dry and dusty for most of the year. Away from the main tar road between Tamale and Bolgatanga the quality of other roads is poor. Travelling from one town to the next takes a lot of time. To drive the 160 km from Bimbilla to Tamale, for example, takes around four hours. The towns in the region are connected to grid electricity, but the supply is sometimes erratic. The people who live there are mainly subsistence and small-scale farmers. ICT could play a role to develop these rural areas.

In 2005, the Ghanaian government launched their Community Information Centre (CIC) initiative to introduce ICTs to 100 rural districts, in an effort to improve connections and increase development in the communities. Each CIC is a combination of not-for-profit community resource centre and for-profit telecentre. The first centres started with the physical building connected to the electricity grid, a local area network (LAN) with at least five computer workstations, one printer, one scanner and five uninterruptable power supply units. The idea was that the CICs should become sustainable after a couple of years under the ownership of the respective district assemblies.

The CICs were established with several objectives, to:

- offer rural communities technological opportunities seen in urban areas
- serve as hub to access local and central government information
- create awareness of ICT in rural areas
- disseminate information to rural areas on health, agriculture, local government and education
- provide the opportunity for ICT training in rural communities
- support rural business activities, such as access to market information, extension services, etc.)

From 2008, those centres based in the Northern and Upper East Regions have received further support from the International Institute of Communication and Development (IICD), and coordinators from local organisations, Savana Signatures and Bold Steps Foundation. The advisors provided technical advice to the district assembly on how to make the centres sustainable, and helped to develop the skills of CIC staff, and managers in particular, by giving hands-on training and mentoring, sharing information and organising meetings with related professionals and people in the districts.

Apart from offering the ICT skills and services to the community, the centres were intended to generate and keep relevant content that could be accessed by the community. The training courses, therefore, focused on developing business skills (making a business plan and marketing the centre), content development (video making, blog writing) and trainer of trainer sessions to enable the staff to train the community members in basic ICT skills.

Motivation

The five northern CICs faced a number of challenges in the beginning, according to Ken Kubuga, adviser of Bold Step Foundation. 'In 2008, the Navrongo centre closed, and the Bongo CIC was yet to open after two faulty starts. Both had problems recruiting and retaining staff and management. Zebilla CIC was officially open to the public but bats in the ceiling of the building gave a good indication of how frequently it was used. Sandema centre was just beginning with a new manager and a supportive district assembly. And Bolgatanga CIC was expected to bring in revenue, but it was challenged with a poor relationship between staff and the municipal assembly.'

By organising meetings and training sessions on subjects including business development, open source awareness and basic troubleshooting, CIC management and staff gradually gained their confidence, skills and knowledge and slowly started to turn around their centres.

For example, the Bolgatanga CIC, the only one of the five northern CICs located in a town, continued to serve an increasing number of visitors, and its focus was gradually shifted from being an internet café to being an information and training centre. The two staff members were soon joined by someone on national service duties, who came at no extra cost to the centre, and by a VSO volunteer who was attached to the municipal assembly.

Both volunteers championed the training sessions at the centre and developed new initiatives, such as a youth ICT camp during school holidays, but most of these never saw the light of day due to inadequate funds. Poor relationships with the district assemblies and the inability to sustain interest even in a self-initiated idea continued to stall the implementation of newer plans. Despite this, the CIC continues to be the preferred place for NGO staff, local government workers, civil servants and

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JAKE LYELL / ALAMY

Finding the balance between serving the community and providing profit-making services can be a challenge for rural information centres.

Pupils admitted they would never have had the opportunity to use the technology at home or in school

public school students to go for secretarial services and internet access.

When the Bongo CIC finally opened it quickly became the centre of ICT-supported services in the district. Nearby basic schools began to have their ICT lessons at the centre, with many pupils having their first experience with a computer there.

The centre in Zebilla, meanwhile, became an important facility for 14 basic schools, whose pupils came for weekly practical ICT lessons. Most of the pupils who attended admitted they would never have had the opportunity to use the technology at home or in school where there was no electricity. The centre increased its support role by organising a district-wide ICT quiz for schools, and an open ICT forum similar to the monthly ICT4D discussion series found the cities of Tamale and Accra. Participants of the two programmes expressed hope that these events would become regular features.

But it was the centre in Sandema that became the star of the five northern CICs, by showing financial sustainability. A few months after the skills training activities, the centre was generating sufficient funds to pay staff, and was able to purchase equipment in order to expand the scope of services. The centre continues to be an example of a successful CIC despite the challenge of being located in a relatively remote area with low literacy levels.

In 2010, the northern CICs received a further boost after they were supplied with equipment, including photocopiers, LCD projectors, digital cameras and binding machines. While the extra equipment helped the centres to become more financially sustainable, the training on content development did not result in locally developed content, as expected.

Assessment

In 2008 and in 2010, visitors to the centres were asked to complete a questionnaire to evaluate the perceived impact of the project. The most interesting results came in from their views on the perceived impact of the centres. 65% of the participants became

CIC Salaga

Salaga, in rural Ghana, has a population of 27,000, serving a wide range of potential users, from students, teachers, farmers, health workers and business people. The main group that visits is students, often between 20 and 50 a day. Most schools in Salaga don't have computers, but ICT is a compulsory subject. They can now use the CIC as a computer lab. But this interferes with the centre's internet cafe services since it only has 13 computers. Other key services are wireless internet for those who can bring their own laptop, ICT training in the form of basic ICT skills, maintenance, and content development, such as blogging and video production. The centre also provides secretarial services and some content development, mainly video coverage of local events. The community did not choose the location of the centre, otherwise it would have been closer to the town centre.

Bimbilla CIC

The CIC in Bimbilla is situated close to the district assembly buildings, around 2 km out of town. The town has a population of around 20,000 people, mainly farmers, and it is the district capital of Nanumba North District. The CIC mainly targets the many schools in the area.

The town has 101 basic schools, 27 junior high schools and two senior high schools. Many of them use the CIC for their ICT practical lessons. The CIC currently has 20 computers, two printers, a photocopier, two scanners and a laminator. As well as internet access, the centre offers business services, such as typing, printing and copying, although they now have competition since two internet cafes opened in the centre of town.

The business services still do not provide enough income for the centre to be financially independent. The district assembly covers most of the costs, including the salary for the CIC manager and the two assistants.

more aware of the possibilities of ICT through the CIC. 55% felt more empowered, and around 50% felt a positive economic impact due to the use of the CIC. The CICs had a less positive impact on gender, with only around 20% of participants noticing any positive gender impact as a result of the CIC, but they gave no reasons for this.

Looking backward after four years of support, it is difficult to say whether the CICs have achieved the initial objectives set by the Ghanaian government. For a start, there were probably too many objectives to be able to fully meet all of them given the investments made by the government, customers and IICD.

'The CICs so far have done very well in providing training to target groups,' says project adviser, Stephen Agbenyo, of Savana Signatures, 'particularly to students, and also in offering ICT services such as printing, internet access, ICT training and photocopying. The missing link, however, is content. There is no locally relevant content at the CICs, and very little effort is being made to change this.'

Navrongo CIC

The centre in Navrongo employed Regina, a woman with no previous work experience and very little background in ICT. She held a college diploma in accountancy, and oozed confidence. She built a strong community of volunteers around herself, and started to generate revenue for the centre from ICT training and providing secretarial services. It was not long before this confidence was extended to the provision of customised ICT training for women teachers, women traders and women working in the media. In an attempt to expand the initiative further, the CIC staff, with the support of the IICD-CIC project coordinator, documented their ideas and developed them to produce funding proposals. The initiative was supported by a US$15,000 grant from GenARDISs. Navrongo CIC's proposal was one of 15 selected from over a 1,000 entries.

Assurance

Ken Kubuga: 'After two years of coordinating the activities of CICs, and indirectly studying the dynamics, I have come to the opinion that the key factors needed for the centres to provide the services to the community are: a good relationship between CIC and district / municipal assembly; intrinsic motivation of staff; and regular technical updating opportunities for CIC staff and management.

'District and municipal assemblies need to show that they have confidence and trust in the people they have appointed to work at the centres, while staff and management need to work to earn such trust. In instances where the assembly is not prepared to pay full salaries to the CIC staff, the assembly should consider the option of entering into a public–private partnership with a local entrepreneur. This worked satisfactorily in Bongo when staff turnover became a headache for the assembly.'

'In my opinion,' adds Martine Koopman, country manager for Ghana at IICD, 'the dilemma still lies in the model of mixing the not-for-profit community resource centre with the for-profit telecentre. The hybrid model makes it difficult to focus. Do you market the centre as an internet café with business services, or do you focus the attention on serving the community? If the centre is used most of the day to offer young Ghanaians the opportunity to learn about computers, its earning capacity from business services suffers, but the community is probably better serviced.

'I think the CIC should have the business services as an additional service, not as their main service. They should focus on the needs of the community in terms of skills building and, most importantly, offer content relevant to the local situation, which can be done in collaboration with local government, businesses, schools, health clinics and NGOs. This could be partly paid by the community, either directly or through services or indirectly through taxation. The commercial business part of the CIC could then be offered by local entrepreneurs who could have received their initial ICT training at that same CIC.'

The CICs clearly raised the ICT awareness and brought the opportunity of ICT training and access to information to the rural communities. But do they bridge the so-called 'digital divide'? Probably not, but they might have narrowed the gap. Urban areas, like Accra, will always develop much faster than the rural areas, but at least the CICs do provide the rural communities with new opportunities. ◀

A model of sustainability

An organisation in South Africa has developed a network of local and international partners to offer a broad range of technology services to underserved communities.

A future for telecentres

The idea was to bring technology to underserviced areas of South Africa, places that had seen little investment in the country's history. Many of these places, known as townships, are densely populated and close to large urban centres, but they still do not have access to technology. Having technology nearby, however, is not the only challenge to be overcome. It has to be affordable too.

In 2006, Siyafunda Community Technology Centres started to look at ways to bring ICTs to communities in the Ekurhuleni (East Rand) area of South Africa. The organisation was aware of previous attempts to introduce specialised technology centres to communities in the country, and was determined not to make the same mistakes.

The government had set up nearly 200 telecentres in townships and rural areas across the country in the late 1990s. Unfortunately, as there was little ongoing support for the centres and their management systems afterwards, very few of them remained operational.

Siyafunda wanted to introduce a new model for running community technology centres, and worked to develop the facilities with other community-based organisations that were already present in the area's townships. There were no publicly available broadband services in the area, for example, but the offices of the Ekurhuleni Metro Municipality were connected. Siyafunda engaged with the municipality to make their network available for a technology centre's internet connectivity, and also arranged to turn some of their vacant premises into digital hubs.

The organisation continued to develop partnerships with other government agencies, local community, social and educational organisations, technology companies, including software developer SAP, and with entrepreneurs.

These partnerships have helped Siyafunda offer a wide range of services that are affordable and at rates that still ensure the centres have sufficient income to make them financially viable. The organisation also provides regular training courses for the centre managers. The courses help managers develop services that the local communities want, and give advice on how to promote the centres.

Siyafunda started with one centre in November 2006, with the intention of running it for around 12 months to test their model of establishing sustainable telecentres through affordable services and electronic learning opportunities. A local community organisation became interested in the work, and soon after went into partnership with Siyafunda to open a second centre. This opened up a network of similar organisations operating in other townships and, as word spread, the number of centres rapidly expanded.

There are now around 50 centres operating around the country, all with links to existing community organisations or businesses that recognised the need for access to ICTs in their area. These community technology centres, therefore, arose from demand within the community and are supported by established enterprises.

Vital connections

By offering a wide range of services, the centres attract a variety of users, including schoolchildren with homework projects, unemployed youth looking to develop their technical, business and other skills or look for jobs, and NGOs and small businesses that make use of the office services or equipment that would otherwise be too expensive for them to buy.

The challenge of reaching communities beyond the urban centres and townships remains, however. To expand the technology services to those areas, Siyafunda supports internet cafes already present in remote communities to adapt to their business model and expand their services. More universities and municipalities in South Africa are interested in the model, with Siyafunda set to develop around 30 new centres in rural parts of the Limpopo and Mpumalanga provinces, and in the semi-arid areas of the Northern Cape.

Recent recognition as best telecentre initiative of the year at the 2011 eIndia awards has raised the profile of the community technology centre programme and put Siyafunda in touch with other related businesses. The organisation is investigating ways to make use of these new connections to develop the use of mobile networks and provide cost-effective services to rural areas. Wireless technology can extend an internet connection and remove the need for cables, or even the need for a physical bricks and mortar centre.

Perhaps the greatest advantage of working with a carefully selected group of partners in community access schemes is that it avoids duplication and re-invention of the wheel. Close collaboration and clearly defined working relationships between government agencies, educational institutions, businesses and community organisations means that resources and costs are shared, and the likelihood of two centres opening in the same small town are reduced. All this helps to ensure that communities get the services they need, at a price they can afford, and from a centre that is likely to be around for the foreseeable future. ◀

G RAMBALDI / CTA

Close collaboration means the partner organisations can share costs and resources, and reduce the chances of duplication.

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JORGEN SCHYTTE / LINEAIR

A service to the community

A resource centre in the west of Kenya adapts its information services to the needs of the community, with ICTs playing a major role in gathering and sharing information.

A future for telecentres

Ugunja Community Resource Centre (UCRC) was founded in 1988, and registered as an NGO in 2004. It serves the Siaya, and neighbouring counties, of west Kenya. Poverty in these parts of the country has been increasing over the years, especially in the low-lying districts where rainfall levels are low and soil quality is poor. UCRC is basically a grassroots organisation, providing a community hub for information on agriculture, environmental conservation, human rights and advocacy issues.

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The centre offers internet access to people living in the neighbouring communities, via a 3G connection over the cell phone network. The connection is reliable, and provides enough bandwidth for UCRC staff to carry out their work writing e-mails and for visitors to browse the web.

To help people in the community become more familiar with technology, the centre organises computer literacy courses, based on Microsoft's Unlimited Potential curriculum. These are open to everyone, but are mainly intended for women and young people living in the area. UCRC also has a traditional library, housing a variety of collections, but with a particular focus on publications related to agriculture.

All of the centre's activities and information services are initiated and developed according to the needs of the people living in the area. The growing popularity of cell phones in recent years means UCRC staff now assist people in making mobile money transfers, getting agricultural market information via SMS, relaying news stories, and connecting farmers with potential partners in transport, processing and marketing.

UCRC has already used FrontlineSMS – free software for sending multiple SMSes – in an education programme delivering information to people living with HIV/Aids. Trainers at the centre are now formalising a similar process that allows farmers to learn agricultural techniques via SMS.

In the last few years, the region has experienced low and erratic rainfall that has resulted in very poor crop

yields. The production of maize, which is the main staple food for the farmers, has seriously declined. Currently, farmers can only produce enough maize to last three months. For the other nine months of the year, the community has to rely on maize coming from beyond the local area, bought from the main market centres. The lack of money to buy extra maize results in real hardship for many families for those nine months.

Equally, the quality of soils in Siaya has been seriously depleted due to continuous tillage and poor farming practices over many years. Research carried out by the World Agroforestry Centre (ICRAF) in the district in 1998 established that Siaya soils lack nitrogen and phosphorus, which are important nutrients required for plant growth and good crop yields.

Many farmers do not have enough money to buy the inorganic fertilisers required to improve the soil and crop productivity. They also need more information and skills to raise crop yields through organic farming techniques.

Regenerate

To mitigate these challenges, UCRC has been promoting farming technologies and crops that can survive with comparatively little moisture. Such crops include sorghum, sweet potatoes and cassava. The organisation encourages farmers to plant high-value trees and to experiment with indigenous vegetable gardening. For example, farmers are growing fruit plants, including banana, pineapple and mango in income generation projects.

These initiatives are part of the centre's sustainable agriculture project, which has been in existence since the establishment of the organisation. The activities of the programme mainly work towards building farmers' capability to help them cope with changes in the climate.

Although the centre is based in the town of Ugunja, UCRC still has to be able to provide information to the farmers in the wider area. The organisation has, therefore, developed a number of strategies to ensure that farmers from farther afield can participate in its programmes. UCRC provides supportive extension services, where the field officers visit farmers to give them advice. Another way is through established community groups, where the organisation delivers training courses as requested by the farmers during their scheduled meeting times. The other training courses and workshops provided are based on an assessment of the farmers' needs and available resources.

The centre also organises on-farm demonstrations and tries out new agricultural techniques. In these instances, UCRC works with research institutions, including Kenya Agricultural Research Institute (KARI) and Kenya Forestry Research Institute (KEFRI), as a way to bridge the research information gap between the farmers and the researchers.

As part of this, the farmers are now trained in 'farmer-led documentation' (FLD) techniques, where the farmers record their progress and local innovations. This means that the farmers have been trained to use digital cameras, audio recorders, video cameras, drawings and report writing skills to capture and store data. UCRC staff work with the farmers and offer technical support during regular visits to the farms.

Distribution

Documentation has been especially important for the testing of new techniques to cope with the changing climate. Agricultural researchers are helping farmers to adopt and devise methods to mitigate the effects of increasingly unpredictable weather patterns. FLD is one way of making the information gathered on new techniques available to more people, and of facilitating data sharing in a short period of time.

The information gathered is always shared in organised community meetings, where farmers can present their findings by showing the photographs, reading out reports, or even through songs and participatory educational exercises. The members then discuss the information, and try to find resolutions to problems and consider methods to ensure the lessons learned are taken up by the broader farming community.

UCRC also uses community learning and resource centres. These are smaller meeting areas in the villages where groups of people can share information on new farming methods. These centres usually do not have the same ICT equipment as the main centre, although they do have libraries for printed documents and books. In the course of their regular visits, however, UCRC staff take their laptops to show digital presentations or videos, many of which can also be viewed and copied to cell phones.

Visitors to the community centres can ask questions, which, if they cannot be answered immediately, are noted on specially developed forms and forwarded to UCRC or other agricultural extension providers, for feedback. The process is similar to how many question-and-answer services operate.

To ensure that the skills acquired through the training courses and other activities will continue to be used and shared in the long term, UCRC has trained 'master farmers', who can act as mentors and trainers in their local area. Farmer groups also have training on organisational methods and a variety of management skills, including subjects such as group dynamics.

The sustainable agriculture programme within UCRC has, over the years, helped to introduce and promote new farming technologies to counter perennial climatic challenges, and improve food security in the areas. The organisation's work goes beyond being simply a resource centre to provide vital capacity for sustaining the livelihoods of people within the community. ◀

Related links

Kenya Agricultural Research Institute
➜ www.kari.org

Kenya Forestry Research Institute
➜ www.kefri.org

FrontlineSMS
➜ www.frontlinesms.com

ICT Update article on FrontlineSMS
➜ http://goo.gl/5UQzz

SHEHZAD NOORANI / UNEAIR

As crops in the area around Ugunja suffer from unpredictable weather patterns, UCRC develops strategies for delivering climate change mitigation information to farmers.

Diversify to survive

A study group from the Southern Africa Telecentre Network visited Botswana to see how public–private partnerships have changed the country's telecentre development programme.

A future for telecentres

The picturesque village of Sikwane is situated in the south-western corner of Botswana, around 50 km from the capital, Gaborone, and close to the border with South Africa. The village has fewer than 2,000 inhabitants, most of whom are livestock farmers. And, it has a telecentre, developed as part of the country's rural infrastructure development programme, Ntseletsa, the Tswana word for 'call me'.

The government of Botswana financed the first phase of Nteletsa, with Botswana Telecommunications Corporation (BTC) charged with developing the rural centres. For the latest phase, Nteletsa II, the government entered into public–private partnerships to establish around 200 centres around the country.

The Nteletsa II telecentres are managed by the local village community, through village development committees (VDC). The Sikwane centre employs three people: a supervisor from the VDC, and two young people who are paid on a commission basis. The centre is housed in a specially converted container, and has three desktop computers, a fax machine, a printer, a photocopying machine, a community payphone, and is connected to the internet via the cell phone network through a 3G router.

The centre provides office services, including photocopying, faxing, laminating and document processing, as well as telephone services, cell phone charging, SIM card and cell phone airtime sales, and internet access. BTC provided the initial stock and equipment, continues to cover electricity costs, and gives technical support, such as equipment maintenance and repair.

Like other Nteletsa II telecentres around the country, the centre in Sikwane faces a number of challenges threatening its sustainability, mainly because few people make use of its services. The main economic activity in the area is livestock farming, and the majority of the population is elderly since many young people have migrated to the main urban centres for work.

Telecentres have to provide locally relevant content to attract customers from the community and increase profitability.


ROEL BURGLER / HH

Engaging

In 2011, a study group from the Zambia Telecentre Network and Southern Africa Telecentre Network visited Sikwane to investigate the long-term viability of the centres and to consider possible improvements for sustainability. The group spoke to the Nteletsa II centre's supervisor, who explained that revenue was too low for the centre to cover its costs, and that employees often had to work without pay.

The supervisor was concerned that people did not visit the centre because it did not offer sufficient services for customers. She suggested that the centre could expand its services to provide the sale of prepaid electricity tokens, stationery and other related goods to attract more visitors and increase revenue.

The study group also found that local farmers had a clear need for information on subjects such as climate change adaptation, weather services and agricultural training. In rural villages, like Sikwane, where the majority of people depend on agriculture for their livelihood, and where land overgrazing and desertification are critical issues, provision of such information services would enhance agricultural production, improve food security and increase income.

To provide this kind of information and, more importantly, to make it relevant to local residents whether they are in Sikwane or any of the 300 plus villages covered by the Nteletsa II centres, the study group recommended that the content be produced locally with consideration for the needs of the surrounding population. This means the relevant information has to be gathered and repackaged for each community.

Developing local content cannot be left solely to the staff of the individual telecentre or ICT specialists. Instead, the production of information has to involve people from all involved sectors, including education, agriculture, health, meteorology, mining, with input from social and economic experts. Agricultural researchers and extension officers need to work together with the village development committees and other supporting partners to develop content and information services relevant to the economic activities of the villagers.

With information available that is relevant to their specific area and livelihood, people living around the telecentres will visit more often to make use of the services. This, in turn, will increase the revenue for the centre, helping it to become sustainable and invest further in improving services and products, and adapt to future developments as the needs of the community change. And, the circle is completed as villagers benefit from a suitably resourced telecentre.

As the telecentre model in Botswana, and many other countries, changes from government and donor-funded initiatives to closer collaborations involving businesses and community organisations, village-based centres will be able to provide more locally relevant content. The study group concluded that the public–private partnerships of the Nteletsa II programme would certainly help the centres increase rural communities' access to information in a way that can be sustainable for survival and adaptable to future developments. ◀

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Offline browsing

For telecentres with limited internet access, it can be useful to have a local copy of some websites. Web browsers let you save individual pages, but not an entire site. For that, you need specialised software. True offline navigation requires a mirror (copy) of a particular website on a hard drive with the content and link structure to recreate the original site's structure.

A future for telecentres

HTTrack is a free and open source website copier. It is multilingual and compatible with Windows (WinHTTrack), Linux and OSX (WebHTTrack). The program is easy to install and use, is fully customisable and actively supported by the developer. This freeware will automatically download a website's entire content, or even just a specific section of it, for future offline reference.

HTTrack will automatically download a website's entire content, or even just a specific section of it, for future offline reference

With copies of useful websites on a local hard drive, telecentres can still offer customers access to information even when the internet connection is down

Copy a site

Visit www.httrack.com, open the download page from the top menu and select the appropriate version of the program, based on your operating system.

The first time you launch the application, you can select the preferred language. Change the language anytime on the 'About WinHTTrack Website Copier' page in the Help menu.

The program uses a wizard to guide you through the necessary steps for capturing and saving websites. On the first screen, you can type the name of a new project or select an existing project to update or resume. It is best to create one project per website or section of a website: name the project after the site you plan to download.

You can also add categories which are optional and useful to group or distinguish between the projects. Create or assign one category (the application will remember them) to each project you start to group them under their respective subject matter. Browse your computer's hard drive to save the file in the folder of your choice, e.g. C:\My Web Sites.

On the next screen, choose what action to execute from the options: copy a website, resume a download or update a mirror already on your hard drive. If you selected an existing project on the previous screen, the program automatically chooses the appropriate action.

Get started

To start a new project, add the URL of the website you want to copy. Websites contains a lot of content and files that may not be important to you. HTTrack developers strongly recommend using URLs for each project that refer only to a section of a website. To download the archive of ICT Update's past issues, for example, add the following web address: http://ictupdate.cta.int/Issues.

Below the text box showing the URL, the 'Set options' button opens a window with several tabs each letting you set download parameters and mirror options. Here, you can use filters to skip large data files, like pictures or PDFs, and set bandwidth capacity and maximum page size, among others.

The filters are essential to keep the size of the download to a minimum. In the 'Set options' screen, select the 'Scan rules' tab. Here you can specify the types of files not to download. If downloading ICT Update's archive, for example, you can choose to exclude the pictures (with file extensions jpg, gif, png) and the PDF files.

The FAQ section on the HTTrack website explains in detail how to set the different parameters and filters correctly, to avoid downloading the entire world wide web.

The final screen lets you define a remote connection access if necessary and also set a timer to postpone the actual download. In most cases this will not be necessary, and you can leave these options blank and click 'Finish' to start the download. Downloading a website will take time and bandwidth. The downloading pane will show what files are in the process of being captured: if some are too slow to get, press the associated 'Skip' button to discard them.

The hard drive will typically need between 500MB and 1GB of free memory for each site, or part of a site. And, since downloading so much data takes a long time and uses a lot of bandwidth, it might be a good idea to plan the downloads at quieter times, or even during the night, to save the internet bandwidth for users.

When the site has downloaded, open the folder where the copy was saved on the hard drive, and select the 'index.html' file to start using the mirrored site.

Important information

Some websites may block automated website copiers like HTTrack for legal or technical reasons, where the content is protected by copyrighted content or to prevent overuse of the original server's bandwidth capacity. Wikipedia and YouTube, for example, do not allow website copiers. Content on Wikipedia can be downloaded at the following address: http://en.wikipedia.org/wiki/Wikipedia:Database_download.

The FAQ section on HTTrack.com gives further information on when to notify a site's administrator before you copy a website. ◀

Related links

➜ **www.httrack.com/page/2/en/index.html**

➜ **www.blogtechnika.com/copy-entire-websites-for-offline-viewing-with-win-httrack-website-copier**

➜ **http://betanews.com/2012/01/26/grab-entire-websites-with-httrack/**

Resources

A future for telecentres

Documents

Public access to ICTs: Sculpting the profile of users – Working Paper
Based on a survey of public access ICT users in five countries, this working paper outlines some basic characteristics of users: their demographics, history of using ICTs and reasons for using public access ICTs. Most users' first contact with computers and the internet was in a public access venue, and even those who have access at home visit these venues for other reasons, such as better equipment, faster connections, being with friends or having access to help from venue staff.
➜ **http://goo.gl/JIZnX**

Telecentres in Uganda do not appeal to rural women
An evaluation of telecentres by the Acacia programme in South Africa revealed that women consistently make up less than one-third of telecentre users, even when female staff and materials that target women are made available. The Uganda-based NGO, UgaBYTES, found that, beyond the common obstacles to access like technical infrastructure, connection costs and computer literacy, women face numerous additional barriers to accessing ICTs.
➜ **http://goo.gl/B6D6c**

Lighting up the Dark: Telecenter Adoption in a Caribbean Agricultural Community


JOHN KATZ / EL LIMON

This study, published in the Journal of Community Informatics, examines how residents of El Limón de Ocoa, a remote agricultural community in the Dominican Republic, have integrated the use of ICTs since the establishment of a local telecentre in 1997. As the longest continuous-running independent telecentre in the Caribbean nation, this site was useful for studying the impact of community-driven ICT adoption in under-privileged rural areas.
➜ **http://goo.gl/gYkgU**

Web resources

Sauti ya wakulima


DAVID SNYDER / ZUMA PRESS / HH

Farmers in the Chambezi region of the Bagamoyo District in Tanzania use smartphones to gather audiovisual evidence of their practices, and publish images and voice recordings on the internet. Since March 2011, the participants of Sauti ya wakulima (voice of the farmers), use the phones to make reports about their observations regarding changes in climate and related issues, and to interview other farmers, thus expanding their network of social relationships.
➜ **http://sautiyawakulima.net**

Knowledge and Information for Food Security in Africa
Rural telecentres can serve as information 'depots' that provide regional, national and international information to agricultural development workers, including information on markets, weather, crop and livestock production, and natural resource protection. In Africa, agricultural colleges, rural schools, experiment stations, extension offices, NGOs and in some places farmer organisations, offer a ready-made institutional and human network for electronic connectivity.
➜ **http://goo.gl/tlylB**

Improving livelihoods with ICTs
The gap in ICTs between North and South is gradually shrinking. The developing world accounts for two-thirds of total mobile phone subscriptions, and Africa has the world's fastest-growing mobile phone market. But to be sustainable, technologies need to factor in social realities. These include how people already share knowledge, and adapt to introduced technologies: mobile phones, for instance, confer status but can eat into much-needed income. Many development agencies opt for technology-led solutions that fail to 'take'. Approaches that keep development concerns at their core and people as their central focus are key.
➜ **http://goo.gl/1sw0l**

Projects

Arid Lands Information Network
ALIN employs field officers to run local technology access centres in Kenya, known as Maarifa centres. The centre is a room or a converted shipping container equipped with computers and internet. It is an information hub where local knowledge is documented by communities with the support of the field officers and shared widely. The centres are also information resource bases with publications, newsletters, research reports and electronically stored information that include CD ROMs, audiovisual material and compendiums.
➜ **www.alin.or.ke**

The Village Base Station


GATES FOUNDATION / FLICKR

The Village Base Station (VBTS) provides a flexible independent telecommunications service that can be powered by wind or solar energy systems, which can be significantly cheaper than similar systems running on diesel generators. VBTS is essentially an outdoor PC with a radio to provide a low-power low-capacity GSM base station with long-distance WiFi taking the signal to the carrier service. The base station can be deployed in the middle of the village, on a nearby hill, or in any other area with line-of-sight coverage.
➜ **http://goo.gl/kayn1**

Agriculture Research and Rural Information Network
Starting in 2003, the ARRIN project has brought agricultural information to rural communities in Uganda by combining dance and dramatic plays with ICTs. The theatre company, Ndere Troupe, which performs all over Uganda and has its main office in Kampala, is responsible for implementing the project, which aims to empower rural populations and communities by promoting and supporting income-generating capacity, as well as awareness of public policy and health and environment-related issues, through the effective dissemination of information.
➜ **http://goo.gl/nZ8Gi**


DON HOLLANDER

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Adapting to the situation

A future for telecentres

How can rural communities benefit from access to ICTs?
➜ People living in rural communities, and elsewhere, benefit from access to ICTs, and the internet, by being able to participate in the full range of activities of contemporary society, including culture, economy and politics. Many, if not all, of these aspects of life are totally intertwined, enabled, enriched and powered with ICTs. Not having access is in some respects a modern form of disability, and certainly a form and source of considerable impoverishment.

Do telecentres help to give communities access to information?
➜ The situation has changed dramatically since the beginning of the telecentre movement. In the beginning, the primary need was to familiarise people with the opportunities that ICTs provide, and to make access available in places, for populations, at prices that were affordable to people in rural areas. Now we have mobiles providing relatively low-cost access in places where fixed lines are unavailable, so some of the initial access and most of the initial familiarisation issues have now been resolved.

But the reasons that people wanted access and used telecentres haven't changed all that much. People in rural areas still need to have access to useful information, to education, to healthcare, to financial services and so on. Some of those services can be provided at a cost, and with certain limitations, via mobiles but others cannot. So while some of the initial reasons for establishing telecentres no longer exist, that doesn`t mean that telecentres no longer have a function. It simply means that that function has (or should have) changed.

While some of the initial reasons for establishing telecentres no longer exist, that doesn`t mean that telecentres no longer have a function.

What, to you, makes a successful telecentre?
➜ I don't think telecentres should be looked at in isolation from: their broader social and economic environment; from the set of connections that they have with local businesses, organisations, markets; and from the network of telecentres and telecentre support services, of which they should be a part. These connections and networks are necessary for a successful telecentre operation. We should be using the network as the basic unit of analysis for telecentres. Without the links to other telecentres and the local business and social ecology, the individual telecentre isn't able to accomplish a great deal.

What other ways are there for improving rural communities' access to technology?
➜ Access to technology is in itself of relatively little value. What is valuable is the access to the opportunity to use technology in meaningful and useful ways, to learn, to conduct business, to communicate with loved ones and friends, to get health advice and medical services and so on. The technology is a simply a means to these ends, and the particular technology required will depend on those services. If the services are sufficiently important, ways to access to the technology will be found.

How can any initiative working to give rural communities access to ICT adapt to keep up with new technological developments?
➜ The challenge isn't keeping up with new technological developments; rather the challenge is to find appropriate services and functionalities of value to those in communities. If those services and functionalities are found and implemented then, whether the technology is the newest or not doesn`t really matter, the application will determine the technology rather than vice versa. Of course, newer technologies make additional services possible, so there is a continuing evolution, but the evolution is driven by the services and uses, not by the technology.

How do you see telecentres developing in the future? Will they still have a role to play while more people have their own cell phones with more functionality?
➜ Cell phones have certain advantages and certain limitations, as do telecentres. In the future, I see synergies between the two, where the advantages of both are integrated to provide enhanced services in rural areas. Telecentres would evolve as places for people to gather and meet face-to-face, with the opportunities for social interaction and immediacy of communication that is possible in those environments.

Cell phones, meanwhile, provide the opportunity for extending those opportunities into places and activities where they had not previously been possible, and for providing an immediacy of response that may not be as available in telecentres. On the other hand, telecentres are able to provide much more complex information and support, facilitating information search, supporting service delivery, integrating ICTs into community and organisational processes in ways that are difficult or awkward to design and implement via mobiles. To my mind, development activity requires a mix of both. ◀

AYLLON / ALAMY

Michael Gurstein's blog thoughts on telecentres

Telecentres are not 'sustainable' – get over it!
➜ http://goo.gl/1lugv

Re-thinking telecentres: a community informatics approach
➜ http://goo.gl/P562z

Next generation telecentres
➜ http://goo.gl/xnbVP


IMAGESOURCE / HH

ICT is not the only technology

ICT cannot exist in isolation, and African governments that consider their ICT policy to be a technology policy should think again, warns Ndubuisi Ekekwe, founder of the non-profit African Institution of Technology in an opinion piece on SciDev.Net. Ekekwe recognises that ICTs are essential for development, creating linkages between public and private institutions, and people and corporations. ICTs improve the speed and efficiency of many processes and make digital education and e-government initiatives possible, but communications technology should not be a substitute for technological advancement in a broader sense.

'Problems like the lack of clean water or lighting cannot be solved by ICT,' says Ekekwe. 'For all the mobile software apps for farmers, Africa still needs seeds for agriculture. Policymakers are wrong to focus almost exclusively on ICT and neglect long-standing development needs.'

By concentrating heavily on ICTs, Ekekwe believes that governments are giving people, and children in particular, a narrow view of technological possibilities and risk limiting the diversity of solutions needed for economic growth. 'There is nothing wrong with teaching ICT. The problem is that no other emerging technology — alternative energy, biotechnology, or nanotechnology — has received the same attention. ICT,' adds Ekekwe, 'is not synonymous with technology.'

➜ Read the full article on SciDev.Net: http://goo.gl/jP6eZ

Responding to climate change

While agricultural communities have a crucial economic and cultural role in developing countries, they are the most vulnerable to the effects of a changing climate. However, a new paper from the Centre for Development Informatics at the University of Manchester, in the UK, argues that ICTs help farmers respond to unpredictable weather patterns through mitigation, monitoring, adaptation and improved access to information.

The strategy brief, entitled ICT-Enabled Responses to Climate Change in Rural Agricultural Communities, notes that farmers are adopting 'climate-smart' agricultural practices, including integrated soil nutrient management, crop diversity and organic agriculture. 'Emerging experiences in rural agricultural communities suggest that the use of ICTs such as mobile phones, radio, TV and video can facilitate the dissemination of climate change messages among vulnerable populations,' say authors, Angelica V. Ospina and Richard Heeks.

➜ Read the full report: http://goo.gl/XQyMO


NEIL PALMER / CIAT / FLICKR

Searching in private

Search engines remain popular—and users are more satisfied than ever with the quality of search results—but many people are anxious about the collection of personal information by search engines and other websites, and say they do not like the idea of personalised search results or targeted advertising.

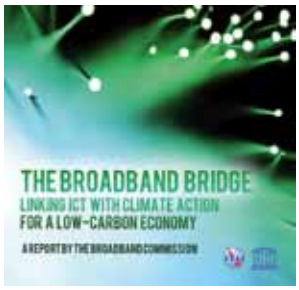
These findings come from a February 2012 Pew Internet Project survey, which finds that 91% of adults online use search engines to find information on the web.

'Search engines are increasingly important to people in their navigation of information spaces, but users are generally uncomfortable with the idea of their search histories being used to target information to them,' said Kristen Purcell, Pew Internet associate director for research and author of the report. 'A clear majority of searchers say that they feel that search engines keeping track of search history is an invasion of privacy, and they also worry about their search results being limited to what's deemed relevant to them.'

These findings arise as policy debates about privacy, collection of personal information online and targeted advertising are heating up. In particular, Google's new privacy policy allows for the collection of information about an individual's online behaviour on any of Google's sites (including its search engine, Google+ social networking site, YouTube video-sharing site, and Gmail) into a combined and cohesive user profile, alerting marketers to which products may appeal to specific individuals.

➜ Read the full report: http://goo.gl/iplqc

The benefits of broadband



Broadband can help transition the world towards a low-carbon economy and address the causes and effects of climate change, according to a new report just released by the Broadband Commission for Digital Development. The report, The Broadband Bridge: Linking ICT with Climate Action, aims to raise awareness of the pivotal role ICTs, and particularly broadband networks, can play in helping creating a low-carbon economy. The report provides practical examples of how broadband can contribute to reducing greenhouse gasses, mitigating and adapting to the effects of climate change, and promoting resource efficiency.

The findings are based on interviews, case studies and supporting material from more than 20 leaders and experts in the field.

'Broadband's role in GDP growth, in enabling the Millennium Development Goals, and offsetting the effects of climate change is just now starting to be understood, because finally the deployment is there and the benefits can be realised,' said Hans Vestberg, chair of the Broadband Commission.

Expansions in investments

JOHN SCHINKER / FLICKR

The Kenyan government has secured US$55.1 million to expand the use of ICTs in the country for content development, improved transparency and accountability, and increased economic growth.

Kenya has the second-fastest broadband connection on the continent (after Ghana), and has increased internet penetration from 3% to 37% of the population in the past decade. Meanwhile, around 90% of Kenyan adults have, or have the use of, a cell phone.

'The additional finance will enable Kenya to consolidate the initiatives it has made in the ICT sector, including the open data initiative,' says Johannes Zutt, World Bank Country Director for Kenya. 'Information technology has on average contributed one percentage point to Kenya's growth since 2000, and opened a path for achieving remarkable improvements in transparency and also in governance.' The government and the Bank will explore a public–private partnership business model for e-government applications.

Developing connectivity

Despite efforts over the past decade to develop ICT infrastructure in developing economies, a new digital divide in terms of ICT impacts persists, according to the latest rankings of The Global Information Technology Report 2012 released recently by the World Economic Forum.

ICT readiness in sub-Saharan Africa remains low. Most countries show significant lags in connectivity due to insufficient development of ICT infrastructure, which remains too costly, and display poor skill levels that do not allow for an efficient use of the available technology. Even in those countries where ICT infrastructure has been improved, ICT-driven impacts on competitiveness and well-being trail behind, resulting in a new digital divide.

With the subtitle, Living in a Hyperconnected World, the report explores the causes and consequences of living in an environment where the internet is accessible and immediate; people and businesses can communicate instantly; and machines are interconnected. The exponential growth of mobile devices, big data and social media is a driver of this process of hyperconnectivity and, consequently, fundamental transformations in all areas of society are being witnessed. This year's report tracks how societies leverage ICT to derive important competitive advantages and increase social well-being.

The Networked Readiness Index featured in the report uses a combination of data from publicly available sources and the results of the Executive Opinion Survey, a comprehensive annual survey conducted by the Forum in collaboration with partner institutes, a network of over 150 leading research institutes and business organisations.

The report contains detailed country profiles for the 142 economies featured in the study, providing a snapshot of each economy's level of ICT uptake and economic and social impacts. Also included is an extensive section of data tables for the 53 indicators used in the computation of the index.

➜ Read the full report: http://goo.gl/5NCby

52.2 %, the drop in fixed-broadband prices in developing countries over the last two years. It is the steepest drop globally
http://goo.gl/79OJc

14,000 km, the length of Main Cable One, the sub-marine communications cable stretching from Portugal to South Africa
http://goo.gl/9IX2G

16 million, the cost in US dollars of a new undersea internet broadband cable to Haiti, replacing the one destroyed in the 2010 earthquake
http://goo.gl/C7Sla

The impact of ICTs

Andrianjafy Rasoanindrainy (andrew.raso@gmail.com) is manager at Farming and Technology for Africa (http://123fta.com)

ICTs

I was a computer scientist, but thanks to the web I became interested in rural development. As an IT engineer by training, I started exploring cyberspace, scanning for relevant information around me. Because of the availability of information, and considering it in the context of Madagascar, where more than 70% of population live in poverty in rural areas, my interest and my consciousness grew.

What's amazing about the web is that you can jump from one world / area / domain to another with a mouse click. I am still reflecting on the pros and cons of the web, but I know it is beneficial for me in so many areas of my life, even though it consumes so much time and brain-energy.

The tools available to help you manage, explore, improve ways of doing things are countless. ICTs in general can improve tremendously your efficiency, effectiveness and the way you work.

However, we must not forget that ICTs and the web can have a huge impact - good and bad - on human lives and behaviour.

ICTs can improve your efficiency, effectiveness and the way you work, but we have to remember that they can have a huge impact – good and bad – on our lives.

Websites

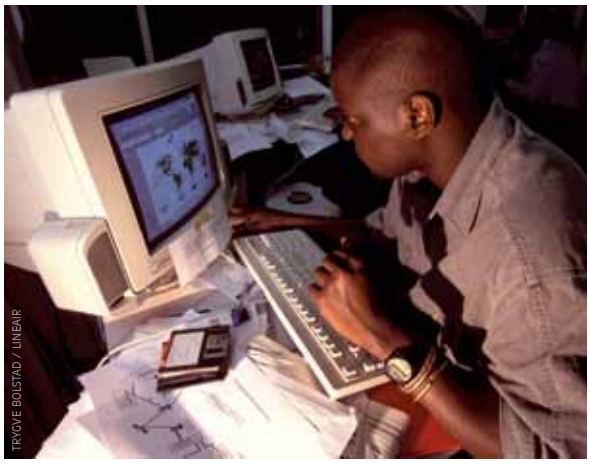
I started thinking seriously about farming some years ago after I visited the rural parts of Madagascar and heard through the media about the poverty, food insecurity, hunger, famine and malnutrition. I decided to start my own experimental farm. I spent some time typing a few key words into a search engine. I found one very interesting site, Infonet-Biovision, which has an abundance of practical information.

When I get tired of reading, I just add the word 'video' to my search. Type 'video' and composting', for example, and you'll find many videos on composting techniques from different areas of the world, some more scientific than others.

With so much many information available, I organise it for quick retrieval in the future, using the bookmarking tool, Diigo. It's powerful and easy to use. I can have different libraries there on agriculture and farming, on ICT and ICT4D. I also use the Mozilla Firefox bookmarking function, which is very easy.

To stay informed of new posts, I use the Firefox RSS feed reader and Google Reader. For instance, I follow news on the Science and Development Network (http://rss.scidev.net/en/) with the Firefox reader.

➜ **Infonet-Biovision**
www.infonet-biovision.org
➜ **Diigo**
www.diigo.com
➜ **SciDevNet**
http://rss.scidev.net/en



TRYGVE BOLSTAD / LINEAIR

Social networking

I use social networking tools in my professional and personal life. LinkedIn helps me stay in touch with many colleagues worldwide. For instance, we have a LinkedIn group for our African Team working on promoting web-based monitoring and evaluation (M&E) tool. I am also member of more than 30 LinkedIn groups, including YPARD, Web2forDev, e-Agriculture, ICT4D, ICT Update, IAALD and M&E group discussions.

For family, friends and our non-profit organisation, I use Facebook, which is more widely known. There, we have a Facebook group for Farming and Technology for Africa initiatives

➜ **PLIK MS monitoring and evaluation**
www.plikms.com
➜ **Farming and Technology for Africa facebook page**
www.facebook.com/pages/FTA-Initiative/117861414949292

Devices

Wherever I go to and important event - a seminar, conference, training course, or meeting - I take my laptop, my cell phone, memory stick and digital camera. For long distance trips (more than 5 hours), I use my tablet PC because of its good battery life and the easy functionality. In some cases, I also take my digital camcorder and my external hard drive to save large amounts of important data and files.

I would have many problems if I didn't have my laptop. It has become my second memory, my way of working and of being productive. And if I'm not connected, many of my colleagues and collaborators won't be able to reach me at all.

For very rational reasons and from previous bad experiences, I always make backups of my key data in (at least) 2 different places. My archiving system is my second laptop (a netbook), and my set of external hard drives where I have almost all my work since 1994.

Future

I dream of a device (a kind of very advanced notebook) that can capture or regenerate energy by itself. No need for an external power supply. It would be able to connect to the web wherever I am - permanent connectivity - with unlimited memory to store all the web content dynamically, if required. This sophisticated device would be very light, even lighter than a cell phones, and at a price that everyone on Earth could afford. I know I'm pushing a little here, but I did say it was a dream. ◀

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